

8-Port 10/100Mbps + 2G TP / SFP Combo PoE Managed Switch



Advanced Features and Centralized Power Management for SMB and Public Service PoE Networking

PLANET FGSD-1022P PoE Switch features IEEE 802.3af Power over Ethernet (PoE) function, which optimizes the installation and power management of network devices such as wireless access points (AP), Voice over IP (VoIP) phones and security video cameras. IEEE 802.3af PoE helps to reduce installation costs of add-in network productivity devices. It frees the wireless AP deployment from restrictions of power outlet locations. With PoE features, power and data switching are integrated into one unit and delivered over a single cable, eliminating costs for additional AC wiring and reducing installation time.

Full-Functioned / Robust Layer2 Features

The FGSD-1022P can be programmed for basic switch management functions such as port speed configuration, port aggregation, VLAN, Spanning Tree protocol, QoS, bandwidth control and IGMP Snooping. It provides IEEE 802.1Q Tagged VLAN and the VLAN groups allowed on the FGSD-1022P will be maximally up to 256. Via aggregation of supporting port, the FGSD-1022P allows the operation of high-speed trunk combining multiple ports. Maximum up to 8 ports can be assigned for 13 trunk groups and it supports fail-over as well.

- 802.1Q VLAN
- IGMP Snooping
- Access Control List
- SSL
- TOS/DSCP QoS
- SNMP and SNMP Trap
- DHCP Relay & DHCP Option 82
- 802.3af Power over Ethernet
- 802.1X Authentication / RADIUS
- 802.1s Multiple Spanning Tree

Full PoE Power Switch for Power Management

Providing 8 PoE in-line power interfaces, the FGSD-1022P PoE Managed Switch offers totally 180 watts for 8 PoE ports and it can easily build a power centrally-controlled IP phone system, IP camera system, or wireless AP group for the enterprises. For instance, 8 IP cameras or APs can be easily installed in the company for surveillance demands or build a wireless roaming environment in the office. Without the power-socket limitation, the PoE Switch makes the installation of cameras or WLAN AP easier and more efficient.

Physical Port

- 8-Port 10/100TX Fast Ethernet ports with IEEE 802.3af PoE injector
- 2 10/100/1000T TP combo interfaces
- 2 mini-GBIC/SFP slots, shared with Port-9 and Port-10
- Reset button for system management
- 1 RS-232 male DB9 console interface for Switch basic management and setup

Power over Ethernet

- Complies with IEEE 802.3af Power over Ethernet End-span PSE
- Up to 8 IEEE 802.3af devices powered
- Offers totally 180 watts for PoE power output
- Supports PoE Power up to 15.4 watts for each PoE ports
- Auto detects powered device (PD)
- Circuit protection prevents power interference between ports
- Remote power feeding up to 100m
- PoE Management
 - Total PoE power budget control
 - Pert port PoE function enable/disable
 - PoE Port Power feeding priority
 - Per PoE port power limit
 - PD classification detection
 - Over Temperature Protection function

Layer 2 Features

- Prevents packet loss flow control:
 - IEEE 802.3x pause frame flow control for full-duplex mode
 - Back-Pressure flow control in half-duplex mode
- High performance of Store-and-Forward architecture, runt/ CRC filtering eliminate erroneous packets to optimize the network bandwidth
- Broadcast / Multicast / Unicast storm control
- 8K MAC address table, automatic source address learning and ageing
- Supports VLAN
 - IEEE 802.1Q Tag-based VLAN
 - Port-based VLAN
 - Q-in-Q tunneling
 - GVRP for dynamic VLAN Management
 - Private VLAN Edge (PVE / Protected Port)
- Supports Link Aggregation
 - up to 13 trunk groups
 - up to 8 ports per trunk group with 1.6Gbps bandwidth

Excellent Traffic Control

PLANET FGSD-1022P is loaded with powerful traffic management and QoS features to enhance services offered by Internet service providers. The functionality includes QoS features such as wire-speed Layer 4 traffic classifiers and bandwidth limiting applications that are particularly useful for multi-tenant unit, multi business unit, Telco, or network service provider. It also empowers the enterprises to take full advantage of the limited network resources and guarantees the best performance in VoIP and video conferencing transmission.

Powerful Management and Easy to Use

For efficient management, the FGSD-1022P is equipped with console, WEB and SNMP management interfaces. With its built-in Web-based management interface, the FGSD-1022P offers an easy-to-use, platform-independent management and configuration facility. It supports standard Simple Network Management Protocol (SNMP) and can be managed via any standard-based management software. For text-based management, the FGSD-1022P can be accessed via Telnet and the console port. Moreover, the FGSD-1022P offers secure remote management by supporting SSL connection which encrypts the packet content at each session.

Powerful Security

PLANET FGSD-1022P offers comprehensive Access Control List (ACL) for enforcing security to the edge. Its protection mechanism also comprises Port-based IEEE 802.1x user, Web Authentication user and device authentication. The Port-security is effective in limiting the numbers of clients that can pass through so that network administrators can now construct highly secured corporate networks with considerably less time and effort than before.

Flexibility and Extension Solution

The two mini-GBIC slots are compatible with 1000Base-SX/LX and WDM SFP (Small Form Factor Pluggable) fiber-optic modules. The distance can be extended from 550 meters (Multi-mode fiber cable) up to 10/30/50/70/120 kilometers (Single-mode fiber or WDM fiber cable). They are well suited for applications within the enterprises data centers, distributions or remote PoE equipment data link.

(Full-duplex Mode)

- IEEE 802.3ad LACP (Link Aggregation Control Protocol)
- Cisco ether-channel (Static Trunk)
- Spanning Tree Protocol
 - STP, IEEE 802.1D (Classic Spanning Tree Protocol)
 - MSTP, IEEE 802.1s (Multiple Spanning Tree Protocol, spanning tree by VLAN)
- Port Mirroring to monitor the incoming or outgoing traffic on a particular port

Quality of Service

- 4 priority queues on all switch ports
- Traffic classification:
 - IEEE 802.1p CoS
 - IP TOS / DSCP to 802.1p priority mapping
 - Port-Based priority
- Strict priority and Weighted Round Robin (WRR) CoS policies
- Supports QoS and In/Out bandwidth control on each port
- In/Out rate limit control on each port

Multicast

- Supports IGMP Snooping v1 and v2
- IGMP Snooping v2 fast leave
- Querier mode support

Security

- IEEE 802.1x Port-based network access control protocol
- RADIUS users access authentication
- L3 / L4 Access Control List (ACL)
- Source IP-MAC / Port-binding
- Port Security for Source MAC address entries filtering

Management

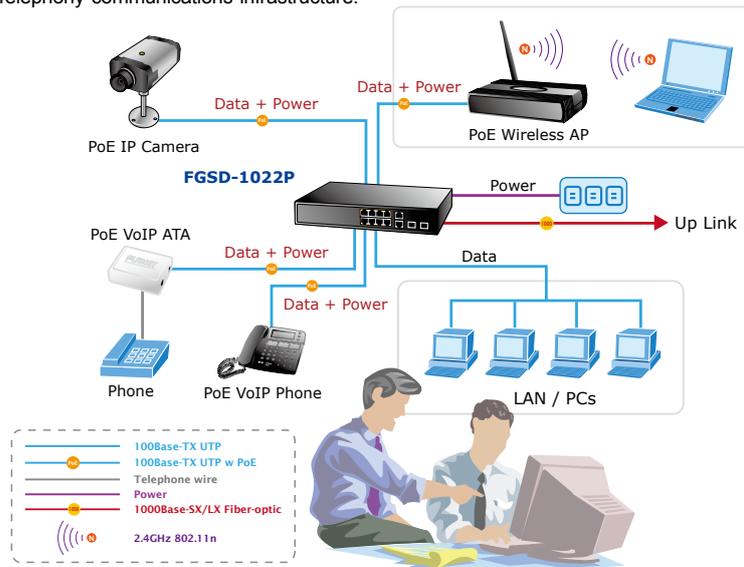
- Switch Management Interface
 - Telnet Command Line Interface
 - Web switch management
 - SNMP v1, v2c, v3 switch management
 - SSL secure management
- DHCP client for IP address assignment
- DHCP Option82 and DHCP Relay
- Link Layer Discovery Protocol (LLDP) for easy network management
- Built-in Trivial File Transfer Protocol (TFTP) client
- Firmware upgrade via TFTP or HTTP
 - Configuration restore / backup via TFTP or HTTP
- Event message logging to remote Syslog server
- Four RMON groups 1, 2, 3, 9 (history, statistics, alarms, and events)
- SNMP trap for interface Link Up and Link Down notification
- Supports Ping function

Applications

IP Office

With the expansion of business office, the additional telephones required could be installed in less cost via the implementation of PoE IP Telephony system than that of the traditional circuit wiring telephony system. PLANET FGSD-1022P PoE Managed Switch helps enterprises to create an integrated data, voice, and powered network. PLANET IEEE 802.3af compliant IP phones can be installed without the need of an additional power cable because the power can be provided from the standard Ethernet cable connecting to the FGSD-1022P. PoE IP phones and Analog Telephony Adapter work perfectly with the FGSD-1022P which injects power through the Ethernet cables.

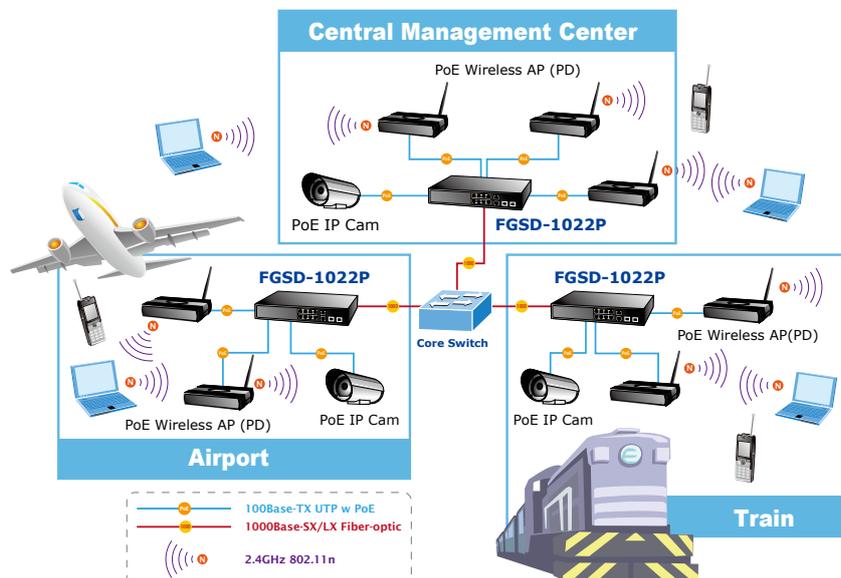
With the FGSD-1022P, IP Telephony deployment becomes more reliable and cost effective, which helps enterprises save tremendous cost when upgrading from the traditional telephony to IP Telephony communications infrastructure.



Transportation – Wireless and IP Surveillance

In modern times, Internet service is mostly demanded during travel times, either for business or for leisure. Besides the wired Internet network, the wireless LAN would be more efficient for the transportation station to provide high-speed and wide area Internet services for travelers. With the PoE wireless LAN APs connected to the FGSD-1022P that provides long distance fiber capability, people can experience the wireless LAN roaming service within the Wi-Fi coverage even when the transportation itself like train, bus or ship moves on its way. With its PoE wireless LAN structure, the transportation authority gains benefit from costing less while providing better Internet services in wider areas for the travelers.

On the other hand, the PoE IP surveillance system deployed helps watch the transportation security and PoE IP Telephony system improves the voice communicating in the station at a lower cost.



Product Specifications

Product	FGSD-1022P 8-Port 10/100Mbps + 2G TP / SFP Combo PoE Managed Switch
Hardware Specifications	
10/100Mbps Copper Ports	8 10/ 100Base-TX RJ-45 auto-MDI/MDI-X ports
1000Mbps Copper Ports	2 10/100/1000Base-T RJ-45 auto-MDI/MDI-X ports
SFP/mini-GBIC Slots	2 1000Base-SX/LX/BX, shared with Port-9~Port-10
Switch Architecture	Store-and-Forward
Switch Fabric	5.6Gbps / non-blocking
Switch Throughput	4.16Mpps @64Bytes
Address Table	8K entries
Share Data Buffer	2 Mbits
Maximum Frame Size	9K Bytes
Flow Control	Back pressure for half-duplex IEEE 802.3x pause frame for full-duplex
LED	Power (Green) Link/Activity (Green) PoE In-Use (Orange) 1000 LNK / ACT(Green) 10/100 LNK / ACT(Orange)
Dimensions (W x D x H)	330 x 155 x 43.5mm
Weight	1.63kg
Reset Button	< 1-5 seconds: System reboot > 10 seconds: Factory default
Power Input	100 ~ 240V AC, 50/60Hz
Power Consumption	200 watts / 58.6 BTU
Power over Ethernet	
PoE Standard	IEEE 802.3af Power over Ethernet / PSE
PoE Power Supply Type	End-span
PoE Power Output	Per port 48V DC, 350mA . Max. 15.4 watts
Power Pin Assignment	1/2(+), 3/6(-)
PoE Power Budget	180 watts
Max. number of Class 2 PD	8
Max. number of Class 3 PD	8
Layer 2 Function	
Management Interface	Console, Telnet, Web Browser, SSL, SNMPv1, v2c, v3
Port Configuration	Port disable/enable Auto-negotiation 10/100/1000Mbps full and half duplex mode selection Flow Control disable / enable
Port Status	Display each port's speed duplex mode, link status and flow control status. Auto-negotiation status, trunk status.
Port Mirroring	TX / RX / Both 1 to 1 monitor
Bandwidth Control	Ingress / Egress Rate Control ▪ Allows to configure per 128Kbps
VLAN	IEEE 802.1Q Tag-based VLAN, up to 255 VLANs groups, out of 4041 VLAN IDs Port-based VLAN Q-in-Q tunneling GVRP for VLAN Management, up to 128 dynamic VLAN entries Private VLAN Edge(PVE / Protected port) with two protected port groups
Link Aggregation	Static Port Trunk IEEE 802.3ad LACP (Link Aggregation Control Protocol) Supports 13 groups of 8-port trunk support
QoS	4 priority queues Traffic classification based on: - Port priority - 802.1p priority - DSCP/TOS field in IP Packet
IGMP Snooping	IGMP (v1/v2) Snooping, up to 256 multicast Groups
Access Control List	IP-based Layer 3 / Layer 4 ACL Up to 220 ACL rule entries

SNMP MIBs	RFC-1213 MIB-II RFC-2863 Interface MIB RFC-2665 EtherLike MIB RFC-1493 Bridge MIB RFC-2819 RMON MIB (Group 1, 2, 3,9) POWER-ETHERNET-MIB
Standards Conformance	
Regulation Compliance	FCC Part 15 Class A, CE
Standards Compliance	IEEE 802.3 10Base-T IEEE 802.3u 100Base-TX IEEE 802.3ab 1000Base-T IEEE 802.3z 1000Base-SX/LX IEEE 802.3x Flow Control and Back Pressure IEEE 802.3ad Port trunk with LACP IEEE 802.1D Spanning Tree Protocol IEEE 802.1s Multiple Spanning Tree Protocol IEEE 802.1p Class of Service IEEE 802.1Q VLAN Tagging IEEE 802.1x Port Authentication Network Control IEEE 802.3af Power over Ethernet RFC 768 UDP RFC 793 TFTP RFC 791 IP RFC 792 ICMP RFC 2068 HTTP RFC 1112 IGMP version 1 RFC 2236 IGMP version 2
Environment	
Operating	Temperature: 0 ~ 50 degrees C Relative Humidity: 20% ~ 95%
Storage	Temperature: -10 ~ 70 degrees C Relative Humidity: 20% ~ 95% (non-condensing)

Ordering Information

FGSD-1022P	8-Port 10/100Mbps + 2 Gigabit TP / SFP Combo PoE Managed Switch
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Related PoE Products

ICA-2200	Full HD PoE Box IP Camera
ICA-2500	5 Mega-pixel PoE Box IP Camera
ICA-3350V	3 Mega-pixel Vari-focal Bullet IR IP Camera
ICA-5350V	3 Mega-pixel Vandalproof IR IP Camera
ICA-HM101	2 Mega-pixel PoE Cube IP Camera
ICA-HM126	H.264 Full HD Box IP Camera
ICA-HM127	3 Mega-pixel H.264 Box IP Camera
ICA-HM131	H.264 Full-HD Fixed Dome IP Camera
ICA-HM132	H.264 2 Mega-pixel 20M IR Vari-focal Dome IP Camera
ICA-HM136	H.264 2 Mega-pixel 20M IR Vandalproof Dome IP Camera
ICA-HM312	2 Mega-pixel 25M IR Outdoor Bullet PoE IP Camera
ICA-HM351	2 Mega-pixel 35M IR Outdoor Box PoE IP Camera
ICF-1700	Touch Screen Internet Multimedia Phone
MGB-Series Transceiver	1000Base-SX/LX SFP Transceiver
POE-152S	IEEE 802.3af Power over Ethernet Splitter
POE-E101	IEEE 802.3af Power over Ethernet Extender
VIP-256PT	802.3af PoE SIP IP Phone
VIP-560PT	Professional PoE IP Phone

Available Modules for FGSD-1022P

MGB-GT	SFP-Port 1000Base-T Module
MGB-SX	SFP-Port 1000Base-SX mini-GBIC module
MGB-LX	SFP-Port 1000Base-LX mini-GBIC module
MGB-L30	SFP-Port 1000Base-LX mini-GBIC module-30km
MGB-L50	SFP-Port 1000Base-LX mini-GBIC module-50km
MGB-L70	SFP-Port 1000Base-LX mini-GBIC module-70km
MGB-L120	SFP-Port 1000Base-LX mini-GBIC module-120km
MGB-LA10	SFP-Port 1000Base-LX (WDM,TX:1310nm) mini-GBIC module-10km
MGB-LB10	SFP-Port 1000Base-LX (WDM,TX:1550nm) mini-GBIC module-10km
MGB-LA20	SFP-Port 1000Base-LX (WDM,TX:1310nm) mini-GBIC module-20km
MGB-LB20	SFP-Port 1000Base-LX (WDM,TX:1550nm) mini-GBIC module-20km
MGB-LA40	SFP-Port 1000Base-LX (WDM,TX:1310nm) mini-GBIC module-40km
MGB-LB40	SFP-Port 1000Base-LX (WDM,TX:1550nm) mini-GBIC module-40km

PLANET Technology Corporation

11F., No.96, Minquan Rd., Xindian Dist., New Taipei City
231, Taiwan (R.O.C.)

Tel: 886-2-2219-9518

Email: sales@planet.com.tw

Fax: 886-2-2219-9528

www.planet.com.tw



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C-FGSD-1022P